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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,954	10/04/2004	Takashi Mihara	040511	7737
23850	7590	09/28/2005	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			BOYKIN, TERRESSA M	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/508,954

Applicant(s)

MIHARA ET AL.

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/05;10/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-7 are rejected under 35 U.S.C. 102( b ) as being anticipated by US 6310112 see cols. 1-6 claim11 and examples.**

The reference **US 6310112** provides a thermoplastic polymer foam having a density of up to 800 kg/m<sup>3</sup>. The foam is made from a hydrogenated vinyl aromatic polymer that contains pendant cycloaliphatic groups. This polymer is conveniently made by hydrogenating a poly(vinyl aromatic) polymer such as polystyrene or a polystyrene-butadiene block copolymer.

In claim 11 the reference claims a foam of claim 10 (of the reference), wherein the additional polymer is a hydrogenated vinyl aromatic homopolymer, a hydrogenated copolymer, a thermoplastic polyurethane, a polycarbonate, a polyamide, a polyether, a poly/vinyl chloride polymer, a poly/vinylidene chloride polymer, a polyester, a polymer that contains lactic acid residuals, a partially hydrogenated or non-hydrogenated block copolymer etc.

Suitable poly lactic acid (PLA) polymers for use in the invention are well known in the literature EP 0 515203A; and EP 0 748846A2 as incorporated by reference therein and which discloses Polylactide blends wherein alloys comprising from about 60 to 98 weight % of a polymer lactic acid and from 40 to 2 weight % of one or more polymers selected from the group of polyalkylene oxides, polymers of alkylene ethers or vinyl alcohol, ethylene - propylene copolymers, optionally halogen substituted conjugated diene polymers, nitrile rubbers, butyl rubbers or thermoplastic polyurethane elastomers have good flexibility and may be formed into useful articles, particularly for packaging purposes.

Suitable polyesters are commercially available from various suppliers, including FIBERCORE.TM. available from American Cyanamid; AROPOL.TM. available from

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Ashland Chemical Company and COREZYN.TM. available from Interplastic. The polyesters of these sources are made from dicarboxylic acid and a diol.

A block is herein defined as a polymeric segment of a copolymer which exhibits microphase separation from a structurally or compositionally different polymeric segment of the copolymer. Microphase separation occurs due to the incompatibility of the polymeric segments within the block copolymer.

For block copolymers made by hydrogenating a vinyl aromatic/conjugated diene block copolymer, the total number average molecular weight ( $M_n$ ) will generally be from 24,000, preferably from 30,000, more preferably from 40,000 and most preferably from 45,000 to 150,000, typically to 100,000, generally to 95,000, preferably to 90,000, more preferably to 85,000, and most preferably to 80,000, as measured by gel permeation chromatography (GPC).

Any foaming process can be utilized in producing a foam of a hydrogenated vinyl aromatic polymer. Typical processes include extrusion foaming, bead stock foaming and bun stock or compression molded foaming. The foam of the reference may be formed into foam beads suitable for molding into articles by expansion of pre-expanded beads containing a blowing agent. The beads may be molded at the time of expansion to form articles of various shapes.

The foam beads may then be molded by any means known in the art, such as charging the foam beads to the mold, compressing the mold to compress the beads, and heating the beads such as with steam to effect coalescing and welding of the beads to form an article. Optionally, the beads may be impregnated with air or other blowing

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agent at an elevated pressure and temperature prior to charging to the mold. Further, the beads may be heated prior to charging. The foam beads may then be molded to blocks or shaped articles by a suitable molding method known in the art.

Since the disclosed molecular weights are expressed differently and thus may be distinct from those claimed, it is incumbent upon applicant(s) to establish that they are in fact different and whether such difference is unobvious. Any properties or characteristics inherent in the prior art, e.g. storage elastic modulus or strain etc., although unobserved or detected by the reference, would still anticipate the claimed invention. Note *In re Swinehart*, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things to distinguish over the prior art".

**Claims 1-7 are rejected under 35 U.S.C. 102( e) as being anticipated by US 6756331 See abstract, cols. 1-4, table 3 claims 2 and 4.**

**US 6756331** discloses a lactic acid-based resin composition containing a mixture of (A) a mixture of (a1) polylactic acid and (a2) an aliphatic polyester, and (B) an aliphatic block co-polyester having a polylactic acid segment and an aliphatic polyester segment, wherein the aliphatic block co-polyester (B): (1) contains a lactic acid component in an amount of from 20 to 80 wt % in terms of monomer, (2) has a weight average molecular weight of 1,000 or more and less than 60,000, and (3) has a weight average molecular weight of the polylactic acid segment of from 500 to 55,000 and a weight average molecular weight of the aliphatic polyester segment of from 500 to 55,000. A molded article formed from the composition can be a film, a sheet, and a filament.

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The soft aliphatic polyester (a2) used in the invention is a polymer having biodegradability that can be produced by variously combining the aliphatic hydroxycarboxylic acid, the aliphatic dihydric alcohol and the aliphatic dibasic acid described later, and preferably has an elastic modulus measured by the test method of JIS K6732 of 2,500 MPa or less, more preferably from 1 to 1,500 MPa, further preferably from 5 to 1,000 MPa, still further preferably from 5 to 750 MPa, and most preferably from 5 to 500 MPa. When the elastic modulus is larger than 2,500 MPa, the softening effect upon mixing with the polylactic acid is small.

The soft aliphatic polyester (a2) used in the invention is a polymer having biodegradability that can be produced by variously combining the aliphatic hydroxycarboxylic acid, the aliphatic dihydric alcohol and the aliphatic dibasic acid described later, and preferably has an elastic modulus measured by the test method of JIS K6732 of 2,500 MPa or less, more preferably from 1 to 1,500 MPa, further preferably from 5 to 1,000 MPa, still further preferably from 5 to 750 MPa, and most preferably from 5 to 500 MPa. When the elastic modulus is larger than 2,500 MPa, the softening effect upon mixing with the polylactic acid is small.

Any properties or characteristics inherent in the prior art, e.g. the occurrence of microphase separation etc., although not specifically mentioned by the reference, would still anticipate the claimed invention since the process steps and the reactants appear to be identical. The solvents used contain a non-or poor solvent in each instance and would thus inherently form at least small increments of solutes when the temperature is lowered. Note *In re Swinehart*, 169 USPQ 226. "It is

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elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things to distinguish over the prior art".

With regard to the weight ratios, the reference discloses that the lactic acid-based resin composition described in item [1], wherein a compositional ratio of the mixture (A) and the aliphatic block co-polyester (B) is from 0.05 to 10 parts by weight of the aliphatic block co-polyester (B) per 100 parts by weight of the mixture (A). Further, a lactic acid-based resin composition described in any one of items [1] to [3], wherein the mixture (A) of the polylactic acid (a1) and the aliphatic polyester (a2) has a mixing ratio of from 80 to 20 parts by weight of the aliphatic polyester (a2) per from 20 to 80 parts by weight of the polylactic acid (a 1).

**Claims 1-3 are rejected under 35 U.S.C. 102( e) as being anticipated by EP 712880B see abstract and pages 2-4**

**EP 712880B** discloses a process for preparing a degradable copolymer of aliphatic polyesters comprises reacting 2 or more kinds of aliphatic polyester homopolymer in the presence of a catalyst in a reaction mixture containing an organic solvent. A degradable copolymer of aliphatic polyesters obtained. by the above process is also claimed. The copolymer can be used to make medical materials, e.g. soluble sutures, and bags, agricultural film, containers, fishing lines and nets, ropes, sanitary covers, stock materials, low-temperature. boxes and cushioning materials. Particularly, it has high performance without added plasticize, making it very suitable for food packaging and medical devices. The copolymer degrades in the human body and the natural environment. It provides an environmentally friendly (biodegradable) substitute for general purpose resins in the mfr. of moldings, film, sheets, filaments, yarns, and



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foams with a specified combination of excellent heat resistance, transparency, elongation, flexibility, plasticity and shaping ability. The copolymer provides properties that no single aliphatic polyester can offer.

In view of the above, there appears to be no significant difference between each of the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

#### **Correspondence**

**Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

A handwritten signature in black ink, appearing to read "Terressa Boykin". The signature is fluid and cursive, with the first name "Terressa" and last name "Boykin" clearly distinguishable.

**Examiner Terressa Boykin**

**Primary Examiner**

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